UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/754,917	01/09/2004	Paolo Pirjanian	EVOL.010A	8224

20995   7590   05/23/2008
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER
WEISKOPF, MARIE

ART UNIT	PAPER NUMBER
3664	

NOTIFICATION DATE	DELIVERY MODE
05/23/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
eOAPilot@kmob.com

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 February 2008*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-12,14-23,25-44,46,47 and 49-56* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-12,14-23,25-44,46,47 and 49-56* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   Claims 1, 3-5, 8, 12, 14-16, 19, 21, 23, 25, 27, 32, 34 and 39 are rejected under

35 U.S.C. 102(b) as being anticipated by Chen (4,613,942).

As per claim 1, Chen discloses a method of programming a device, the method

comprising: providing a plurality of card-like objects (col. 4, lines 32-33), where at least

one surface of the card-like objects includes indicia (col. 3, line 2), wherein at least a

portion of the indicia is machine readable and at least a portion is human recognizable

(col. 4, lines 35-38); visually recognizing the indicia on at least some of the card-like

objects using an image recognition process (col. 4, lines 42-44); associating the

recognized indicia with one or more executable program instructions (col. 3, lines 29-

32); and arranging the one or more executable program instructions to create at least a

portion of a computer program for control of the device (col. 4, lines 45-51); Chen

further discloses wherein the device that is controlled corresponds to a mobile robot,

wherein control includes mobility of the mobile robot, wherein the computer program is

configured to control mobility of the mobile robot as a whole away from current position.

(Column 3, lines 35-49; Column 5, lines 6-13) The whole robot arm disclosed in Chen

is moved away from its current position in order to perform the task needed.

As per claims 3-5, Chen discloses a digital camera to detect visual features of the card-like objects, where the camera views the card-like objects without touching the card-like objects is the equivalent of the camera (14), digital image processor (15), and computer (16) disclosed by Chen (as evidenced by The Free On-line Dictionary of Computing, see paragraph 6 of this Office Action). Chen discloses an optical scanner via scanning images (see Fig. 10B) to recognize the one or more card-like objects, where the optical scanner recognizes the one or more card-like objects without touching the objects as shown in figure 1 where a schematic view of the invention shows indicia being scanned from a distance. Chen discloses indicia that comprise of both graphical (75a-e and 77a-e) markings and textual (76a-e) symbols (col. 4, lines 40-44).

As per claim 8, Chen discloses a portion of a computer program that comprises at least one of a complete program, a macro, and a sub-routine (col. 2, lines 58-61).

As per claim 12, Chen discloses a method of programming a device, the method comprising: visually recognizing indicia that are visible on at least one surface of one or more planar objects, where at least one surface of the planar objects includes indicia, where at least a portion of the indicia is machine readable and at least a portion is human recognizable (col. 4, lines 35-38); automatically associating at least some of the recognized indicia with one or more executable program instructions (col. 3, lines 29-32); and arranging the one or more executable program instructions to create at least a portion of a computer program for the device for control of the device (col. 4, lines 45-51); Chen further discloses wherein the device that is controlled corresponds to a mobile robot, wherein the computer program is configured to control mobility of the

mobile robot as a whole away from current position. (Column 3, lines 35-49; Column 5, lines 6-13) The whole robot arm disclosed in Chen is moved away from its current position in order to perform the task needed.

As per claims 14-16, Chen discloses receiving data from a digital camera to detect visual features of the planar objects, where the camera views the planar objects without contacting the planar objects is the equivalent of the camera (14), digital image processor (15), and computer (16) disclosed by Chen (as evidenced by The Free On-line Dictionary of Computing, see paragraph 6 of this Office Action). Chen discloses an optical scanner via scanning images (see Fig. 10B) to recognize the one or more card-like objects, where the optical scanner recognizes the one or more card-like objects as shown in figure 1 where a schematic view of the invention shows indicia being scanned from a distance. Chen discloses indicia that comprise of both graphical (75a-e and 77a-e) markings and textual (76a-e) symbols (col. 4, lines 40-44).

As per claim 19, Chen discloses a portion of a computer program comprises at least one of a complete program, a macro, and a sub-routine (col. 2, lines 58-61).

As per claim 21, Chen discloses associating at least some of the recognized indicia with one or more commands, where the commands are related to control of a programming environment (col. 3, lines 29-32).

As per claim 23, Chen discloses a method of controlling a machine, the method comprising: visually observing indicia that are visible on at least a surface of an object, where the indicia are at least partially machine readable and at least partially human recognizable, where at least some of the indicia is associated with a desired behavior

for the machine (col. 4, lines 35-38); associating the recognized indicia with

corresponding behavior based at least in part on data retrieved from a data store (col. 3,

lines 29-32); and controlling a behavior of the machine according to the recognized

indicia (col. 4, lines 45-51); Chen further discloses wherein the machine corresponds to

a mobile robot, wherein at least a portion of the behavior that is controlled is configured

to control mobility of the mobile robot as a whole away from a current position. (Column

3, lines 35-49; Column 5, lines 6-13) The whole robot arm disclosed in Chen is moved

away from its current position in order to perform the task needed.

As per claim 25, Chen discloses a card-like object (col. 4, lines 32-33).

As per claim 27, Chen discloses visually observing a plurality of indicia on a

plurality of objects; associating the plurality of indicia with a plurality of desired

behaviors; arranging the plurality of desired behaviors in an order according to a visually

observed arrangement of the corresponding plurality of objects; and controlling the

behavior of the machine according to the order (col. 4, lines 32-51).

As per claim 32, Chen discloses indicia that are machine readable and a portion

of the indicia that are human recognizable are on a same surface of the object (col. 4,

lines 40-44).

As per claim 34, Chen discloses a portion of the indicia that are human

recognizable corresponds to one or more words written in plain text (76a-e).

As per claim 39, Chen discloses wherein the indicia associated with the actions

correspond to actions for control of a mobile device (Column 5, lines 6-13).

3.   A digital camera is a camera that captures and stores still images as digital data

instead of on photographic film (digital camera. (n.d.). *The Free On-line Dictionary of*

Computing. Retrieved February 01, 2007, from Dictionary.com website:

http://dictionary.reference.com/browse/digital camera). An optical scanner is a device

that converts printed images and text into digital information that can be edited,

transmitted, and stored (optical scanner. (n.d.). *The American Heritage® Science*

Dictionary. Retrieved February 01, 2007, from Dictionary.com website:

http://dictionary.reference.com/browse/optical scanner). The camera (14), digital image

processor (15), and computer (16) disclosed by Chen is the equivalent of a digital

camera and an optical scanner.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 6, 17, 20, 28, and 31 rejected under 35 U.S.C. 103(a) as being

unpatentable over Chen (4,613,942), in view of Lawton et al. (5,832,100).

       Although Chen discloses all the claimed elements as mentioned in claims 1, 12,

and 23, Chen fails to disclose the card-like objects being formed at least in part from

paper, and the card-like objects are not affixed to other objects; Chen also fails to

disclose that the portion that is machine readable and the portion that is human

recognizable are the same; and Chen fails to disclose indicia that have been correctly identified by visually observing consistent data for indicia.

Lawton in the same field of invention discloses a method, wherein the card-like objects are formed at least in part from paper, and the card-like objects are not affixed to other objects (col. 3, lines 37-41). Lawton further discloses the portion that is machine readable and the portion that is human recognizable are the same (col. 8, lines 10-12) and verifying that the indicia have been correctly identified by visually observing consistent data for indicia (col. 8, lines 1-3).

From this teaching of Lawton, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of programming and controlling a device of Chen to include forming card-like objects at least in part from paper, not affixing the card-like object to other objects, having the same indicia being recognizable to human and machine, and verifying that the indicia have been correctly identified by visually observing consistent data for indicia as taught by Lawton in order to convert information on paper documents into valid, computer-readable text (Lawton col. 3, lines 37-41).

6.   Claims 7, 9, 10, 18, 26, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (4,613,942), in view of Luebbert (Communications of the ACM, Volume 7, Issue 12).

Although Chen discloses all the claimed elements as mentioned in claims 1, 12, and 23, Chen fails to disclose a card-like object corresponds to programming commands and tokens and not associated to a product code or contents of a product.

Luebbert in the same field of invention discloses a method, wherein a card-like object corresponds to at least one of a token card and a command card inherently shown in the programming cards in figures 1-4. Luebbert also inherently discloses in figure 3 associating the recognized indicia with one or more commands, where the commands control a programming environment and are not incorporated into an executable program and automatically executing the one or more associated commands to control the program as evidenced by the programming language Fortran that card is used the program a subset of. Luebbert also discloses in the article inherently in the cards in figures 1-4 commands and command parameters to at least partially control the behavior of a programming system machine. Further, Luebbert does not associate indicia with a product code and indicia are not associated with an identification of a content of an object.

From this teaching of Luebbert, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of programming and controlling a device of Chen to include a method, wherein a card-like object corresponds to at least one of a token card and a command card that is not associated with a product or contents of a product as taught by Luebbert in order to have a simple, economical technique that cannot otherwise be achieved with multiple remote-processing inputs (Leubbert paragraph 5).

7.   Claims 11 and 22 rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (4,613,942), in view of Se et al. (The International Journal of Robotics Research, Vol. 21, No. 8).

Although Chen discloses all the claimed elements as mentioned in claims 1 and 12, Chen fails to disclose a method, wherein visually recognizing the indicia further comprises recognizing visual features that correspond to scale-invariant features (SIFT).

Se in the same field of invention discloses using SIFT for image feature generation in object recognition applications (section 2).

From this teaching of Se, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of programming a device of Chen to include the SIFT algorithm as taught by Se for the purpose of image feature generation in object recognition applications (Se section 2).

8.   Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (4,613,942), in view of Treiber (3,989,929).

Although Chen discloses all claimed elements as mentioned in claim 23, Chen fails to disclose a portion of indicia that are machine readable and a portion of indicia that are human recognizable are on different surfaces of an object.

Treiber in the same field of invention discloses an arrangement to locate a machine readable label on the bottom of a package and a human readable label on the top of a package (col. 2, lines 15-19).

From this teaching of Treiber, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of controlling a machine of Chen to include machine readable indicia and human readable indicia that

are on different surfaces of an object as taught by Treiber in order to control a

computing system (Treiber col. 2, lines 67-68 and col. 1, lines 1-14).

9.   Claims 35, 37, 38, 40, 50 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Chen.

        As per claims 35, 37, 38, 40, 50, Chen discloses a set of one or more cards with

indicia associated with operators, flow control, actions for a computer and commands.

Further, each card has a portion comprising graphical indica and a portion comprising

computer-readable instructions. (Column 4, lines 28-56) Chen fails to specifically

disclose one of the cards being a "break" instruction, however, it would have been

obvious to one having ordinary skill in the art at the time of the invention to provide all

sort of instructions to the equipment, especially such instructions as to break or wait,

especially in instances where the robot is used along with a conveyor belt. Further, they

user would want a break function in order to end the current loop of controls the robot is

operating with and this would have been obvious to have included.

10.   Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen

US (4,613,942) in view of Wuschack (IBM Quality Assurance Operating Procedure,

Book 1, Volume 03, Subject 109).

        Although Chen discloses all claimed elements as mentioned in claim 35, Chen

fails to disclose that computer control cards are fabricated from card stock.

        Wuschack in the same field of invention discloses using card stock to produce

data processing cards (1.1.1, page 1).

From this teaching of Wuschack, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify a set of computer control cards of Chen to include fabricating computer control cards from card stock as taught by Wuschack in order to produce data processing cards (1.1.1, page 1).

11.   Claims 41, 43-44, 46-47, 49 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (4,613,942), in view of Lowe (US 6,711,293 B1).

Although Chen discloses a module with instructions configured to visually recognize indicia that are visible on at least one surface of one or more planar objects, where at least one surface of the planar objects includes indicia, where at least a portion of the indicia is machine readable and at least a portion is human recognizable (col. 4, lines 40-44); a module with instructions configured to automatically associate at least some of the recognized indicia with one or more executable program instructions (col. 3, lines 29-32); and a module with instructions configured to arrange the one or more executable program instructions to create at least a portion of a computer program for control of the device (col. 4, lines 45-51); Chen discloses wherein the device corresponds to a mobile robot, wherein the computer program is configured to control mobility of the mobile robot as a whole away from current position. (Column 3, lines 35-49; Column 5, lines 6-13) The whole robot arm disclosed in Chen is moved away from its current position in order to perform the task needed.   Chen further discloses the use of a robot (col. 2, lines 61-64). Chen fails to disclose a computer program embodied in a tangible medium for controlling a device, instructions configured to visually recognize indicia using SIFT, and a circuit for controlling a device.

Lowe in the same field of invention discloses a computer program embodied in a

tangible medium for controlling a device (col. 4, lines 39-42 and col. 4, lines 52-53),

instructions configured to visually recognize indicia using SIFT (col. 1, lines 43-47), and

a circuit for controlling a device (col. 2, lines 4-5).

From this teaching of Lowe, it would have been obvious to one having ordinary

skill in the art at the time the invention was made to modify a computer program of Chen

to include a computer program embodied in a tangible medium for controlling a device,

instructions configured to visually recognize indicia using SIFT, and a circuit for

controlling a device as taught by Lowe in order to address the need for a computer

vision system to identify scale invariant features in an image and a further method and

apparatus using such scale invariant features to locate an object in an image (col. 1,

lines 35-50).

12.   Claims 51-53 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Chen (4,613,942).

Claims 51-53 are just basic coding instructions seen in any computer program.

The purpose of the cards in Chen is to be able to program the robot as needed to do a

variety of tasks, therefore, it would have been obvious to one having ordinary skill in the

art at the time of the invention to include "break", "repeat", "start", "end", "suspend",

"move" and "speed" instructions to the robot in order for the robot to be able to perform

the task needed.

As per claim 55, Chen fails to specifically disclose wherein the portion comprising

computer-readable instructions comprises a printed code, however, Chen does disclose

providing shapes that the system can determine to mean a certain function, therefore

being a printed code. It would have been obvious to one having ordinary skill in the art

at the time of the invention to use whatever type of printed code necessary to give the

robot the necessary tasks it needs to perform.

Response to Arguments

13.   Applicant's arguments filed 2/11/08 have been fully considered but they are not

persuasive. In regard to independent claims 1, 12, 23, 41, 44 and 47, Examiner

disagrees that Chen fails to disclose a mobile robot that moves away as a whole from

the current position. Chen discloses a robot arm, which moves to different positions in

order to do certain tasks and this therefore is moving away as a whole from the current

position to another position in order to perform the task at hand. Although the robot

does not "walk" or "roll" away from the current position, one of ordinary skill in the art

would not read the claims so narrowly. The robot arm disclosed by Chen clearly moves

away, as a whole, from a current position to operate specific tasks.

Conclusion

14.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to MARIE A. WEISKOPF whose telephone number is

(571)272-6288. The examiner can normally be reached on Monday-Thursday between

7:00 AM and 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Khoi Tran can be reached on (571) 272-6919. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MW
/Khoi H Tran/
Supervisory Patent Examiner, Art Unit 3664